ABSTRACT

An infinitely variable physical vapor deposition matrix system that allows the synthesis of multiple combinatorial catalyst samples at essentially the same time, by the co-deposition of multiple materials, or the sequential layer by layer deposition of multiple catalyst constituents, or both, such that the optimum mix of materials for a pre-determined application can be experimentally determined in subsequent testing. The discovery of optimal catalyst combinations for utilization in specified reactions and devices is facilitated. The high throughput system reduces the time and complexity of processing typically required to formulate and test combinatorial catalyst materials.